

Executive Order 13693

*Planning for Federal Sustainability in the
Next Decade*

Guidance for Federal Agencies on Executive Order 13693 – Federal Fleet Management

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Federal Fleet Vehicle Management, including Vehicle Allocation Methodology (VAM) and Telematics

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Abbreviations and Acronyms

AFV	alternative fuel vehicle	HEV	hybrid electric vehicle
BEV	battery electric vehicle	kWh	kilowatt-hour
CEQ	Council on Environmental Quality	LDV	light-duty vehicle
CFR	Code of Federal Regulations	LE	law enforcement
CIA	Central Intelligence Agency	LNG	liquefied natural gas
CMSA	consolidated metropolitan statistical area	LPG	liquid petroleum gas
CNG	compressed natural gas	LSEV	low-speed electric vehicle
CSO	Chief Sustainability Officer	MDV	medium-duty vehicle
DLA	Defense Logistics Agency	MSA	metropolitan statistical area
DOD	U.S. Department of Defense	NDAA	National Defense Authorization Act
DOE	U.S. Department of Energy	OFS	Office of Federal Sustainability
E.O.	executive order	OMB	Office of Management and Budget
ECRA	Energy Conservation Reauthorization Act	PHEV	plug-in hybrid electric vehicle
EISA	Energy Independence and Security Act	SSPP	Strategic Sustainability Performance Plan
EPAct	Energy Policy Act	U.S.C.	United States Code
EV	electric vehicle	USPS	U.S. Postal Service
EVSE	electric vehicle supply equipment	VA	U.S. Department of Veterans Affairs
FAST	Federal Automotive Statistical Tool	VAM	vehicle allocation methodology
FCEV	fuel cell electric vehicle	ZEV	zero emission vehicle
FEB	Federal Executive Board		
FEMP	Federal Energy Management Program		
FedFMS	Federal Fleet Management System		
FHWA	Federal Highway Administration		
FleetDASH	Fleet Sustainability Dashboard		
FMIS	fleet management information system		
FMP	Fleet Management Plan		
FMR	Federal Management Regulation		
FMVRS	Federal Motor Vehicle Registration System		
FY	fiscal year		
g CO ₂ e	grams of carbon dioxide equivalents		
GAO	Government Accountability Office		
GGE	gasoline gallon equivalent		
GHG	greenhouse gas		
GOCO	government-owned, contractor-operated		
GSA	U.S. General Services Administration		
HDV	heavy-duty vehicle		

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1 Introduction

1.1 Purpose

The U.S. Department of Energy (DOE) and U.S. General Services Administration (GSA) are issuing comprehensive guidance on the federal fleet requirements of Executive Order (E.O.) 13693, *Planning for Federal Sustainability in the Next Decade* (E.O. 13693), to help federal agencies subject to the executive order develop an overall approach for reducing total fleet greenhouse gas (GHG) emissions and fleet-wide per-mile GHG emissions, and ensure the approach helps these agencies meet their requirements. Three key GHG emissions reduction strategies—right-sizing fleets to mission, increasing fleet fuel efficiency, and displacing petroleum with alternative fuel use—are essential to meeting the requirements and are discussed further in this document.

This guidance document is intended to help agency Chief Sustainability Officers (CSOs) and headquarters fleet managers craft tailored executable plans that achieve the purpose of E.O. 13693. The guidance will assist agencies in completing the first phase of a comprehensive fleet management framework by identifying the strategies each agency will then implement to meet or exceed its requirements. DOE’s *Comprehensive Federal Fleet Management Handbook* (Handbook) supplements this guidance, providing additional detail necessary for agencies to execute the remainder of the fleet management framework. The Handbook will continue to help headquarters and site location federal fleet managers develop the specifics relevant to implementing their executable plans, including selecting optimal GHG emission reduction strategies for each fleet location, meeting or exceeding related fleet requirements, acquiring vehicles to support these strategies while minimizing vehicle size and fleet size, and refining strategies based on agency performance. Please refer to the Handbook for more information on implementing any component addressed in this guidance document.

1.2 Executive Order 13693 Vision for Federal Fleets

E.O. 13693, signed on March 19, 2015, establishes a strategy to “maintain Federal leadership in sustainability and greenhouse gas emission reductions” for the next decade. Employing this strategy “calls for expanded and updated Federal environmental performance goals with a **clear overarching objective of reducing greenhouse gas emissions across Federal operations.**”

1.3 Summary of Executive Order 13693 Federal Fleet Requirements

E.O. 13693 establishes overall agency GHG emissions goals and associated planning requirements, which include GHG emission reductions from federal fleets. Agencies have targets to reduce—relative to a fiscal year (FY) 2008 baseline, and by the end of FY 2025—scope 1 and 2 GHG emissions by at least 40 percent and scope 3 GHG emissions by an amount each agency self-determines. Federal fleets generate scope 1 GHG emissions from the combustion of fuel by vehicles with internal combustion engines and scope 2 emissions from the production of electricity used to power electric vehicles (EVs).

Section 3(g) of E.O. 13693 establishes six federal fleet requirements to help meet this agency-wide GHG reduction target and “improve agency fleet and vehicle efficiency and management,” each of which is discussed in further detail in the following four subsections.

Greenhouse Gas Emissions Sources

Scope 1 GHG emissions include GHG emissions generated from operating internal combustion engines in federal fleet vehicles.

Scope 2 GHG emissions include GHG emissions generated from the production of electricity (including electricity used to power federal fleet vehicles).

Scope 3 GHG emissions include GHG emissions from sources not directly controlled by a federal agency but related to agency activities, such as employee travel and commuting.

Federal fleet vehicles generate scope 1 and scope 2 GHG emissions. CEQ’s *Federal Greenhouse Gas Accounting and Reporting Guidance* establishes requirements for federal agencies in calculating and reporting GHG emissions.

1.3.1 Reducing Federal Fleet per-Mile Greenhouse Gas Emissions

Section 3(g)(ii) of E.O. 13693 requires federal fleets to reduce fleet-wide per-mile GHG emissions from agency fleet vehicles, relative to an FY 2014 baseline, by not less than 4 percent by the end of FY 2017, not less than 15 percent by the end of FY 2021, and not less than 30 percent by the end of FY 2025.

This **new fleet performance metric—fleet-wide per-mile GHG emissions**—not only helps agencies achieve the overarching E.O. 13693 goal to reduce agency GHG emissions, but also provides agencies flexibility in reducing GHG emissions while meeting mission requirements that may change over time.

Reducing GHG emissions is a familiar goal to federal fleet managers, as are the strategies to achieve per-mile GHG emissions: right-sizing fleets and vehicles to mission, increasing the fleet’s fuel efficiency, and using alternative fuels in place of fossil fuels. Chapter 3 of this guidance provides more detail on E.O. 13693 per-mile GHG emissions reduction requirements.

1.3.2 Deploying Zero Emission Vehicles, Plug-In Hybrid Vehicles, and Associated Charging Infrastructure

Section 3(g)(v) of E.O. 13693 establishes goals for acquiring two types of advanced technology passenger vehicles: zero emission vehicles (ZEVs) and plug-in hybrid electric vehicles (PHEVs). Federal fleets must ensure these types of vehicles account for 20 percent of all new agency passenger vehicle acquisitions by FY 2020 and 50 percent by FY 2025. These targets phase in over time and account for the expected future market availability and cost competitiveness of these vehicles.

Acquiring and deploying ZEVs and PHEVs in place of current conventional vehicles in fleet inventories will directly assist agencies in achieving the E.O. 13693 fleet-wide per-mile GHG emissions targets. ZEVs, including all-electric vehicles and fuel cell electric vehicles (FCEVs), generate no tailpipe GHG emissions. Per-mile GHG emissions from PHEVs are lower than conventional vehicles and depend on the amount and source of electricity as well as the amount and type of conventional or alternative fuel used.

Advanced Technology Passenger Vehicles

ZEVs produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) or GHG under any possible operational modes or conditions. Examples of ZEVs include all-electric vehicles (also referred to as battery electric vehicles or BEVs) and fuel cell electric vehicles (FCEVs).

PHEVs are powered by both an electric motor (using energy from a battery with a capacity of at least 4 kilowatt-hours that plugs into an electric power source) and an internal combustion engine (using conventional or alternative fuel).

Section 3(g)(vi) of E.O. 13693 complements the ZEV and PHEV acquisition requirements by ensuring that GSA and agencies plan for (and implement) appropriate charging or refueling infrastructure (or other power storage technologies) for ZEVs and PHEVs, and find opportunities for ancillary services to support vehicle-to-grid technology. This provision encourages the deployment of charging and refueling stations at federal facilities, along with vehicle-level data reporting capabilities, to both support the federal fleet adoption of PHEVs and ZEVs and promote sustainable commuting practices for federal employees (see Section 4.7). Chapter 4 of this guidance provides more detail on E.O. 13693 ZEV and PHEV acquisition and charging, and refueling infrastructure requirements.

1.3.3 Determining the Optimum Vehicle Inventory

Section 3(g)(i) of E.O. 13693 requires agencies to implement a vehicle allocation methodology (VAM) to determine the optimum fleet inventory that supports the reduction of overall fleet GHG emissions. A VAM should identify opportunities to eliminate unnecessary vehicles; deploy more efficient vehicles; reduce fuel usage and miles driven; and promote the deployment and use of ZEVs, PHEVs, and other alternative fuel vehicles (AFVs). Additionally, the VAM should help agencies identify opportunities to promote the cost-effective operation and maintenance of the fleet throughout the life cycle of fleet vehicles. Chapter 5 of this guidance provides more detail on E.O. 13693 VAM requirements.

1.3.4 Deploying Vehicle Telematics and Managing Operational Data

E.O. 13693 requires agencies to collect vehicle asset-level operational data (i.e., data for each vehicle) via telematics that are to be deployed in all new light-duty vehicle (LDV) and medium-duty vehicle (MDV) acquisitions, except where the agency determines that it is not appropriate (see Section 6.2 for more detail). Collection and analysis of operational data for individual vehicles—such as fuel use, maintenance, utilization, idling, location, routing or mapping of trips, emissions, or speed—can all help fleet managers identify opportunities to reduce fleet size, fuel use, misuse of vehicles, unnecessary maintenance, and, ultimately, reduce fleet costs. E.O. 13693 encourages agencies to acquire telematics through GSA to leverage cost savings from volume procurements and to standardize telematics data management across agencies.

E.O. 13693 Section 3(g)(iv) requires agencies to collect and manage annual asset-level fleet data (rather than aggregated data) in a formal agency fleet management system and submit relevant data managed in that system to the three primary federal fleet data management systems: the Federal Automotive Statistical Tool (FAST),¹ the Federal Motor Vehicle Registration System (FMVRS), and the Fleet Sustainability Dashboard (FleetDASH).² FAST is a web-based reporting tool that collects federal fleet data necessary to determine compliance with sustainability requirements. FMVRS contains vehicle and license plate information for vehicles that the federal government owns or leases from GSA Fleet. FleetDASH is a tool that helps agencies monitor their fuel use and GHG emissions, identifying both successes and opportunities to use alternative fuel. Chapters 6 and 7 of this guidance provide more detail on E.O. 13693 telematics and vehicle asset-level fleet data requirements, respectively.

1.4 Overview of Related Federal Fleet Requirements

Agencies are required to meet E.O. 13693 fleet requirements while fulfilling mission-critical needs and complying with all federal goals and mandates. The federal government has established additional federal fleet requirements, including but not limited to requirements under the following statutes.

- **Energy Policy and Conservation Act of 1975 Section 400AA**, as amended (42 U.S.C. § 6374)
- **Energy Policy Act (EPAct) of 1992 Section 303**, as amended (42 U.S.C. § 13212)
- **EPAct 2005 Section 701** (42 U.S.C. § 6374(a)(3)(E))
- **Energy Independence and Security Act (EISA) of 2007 Sections 141 and 246** (42 U.S.C. §§ 13212(f) and 17053)

Table 1-1 summarizes some of the key federal fleet management requirements provided by statute and E.O. 13693. Note that there are slight differences in the scope of federal agencies and fleet vehicles that are subject to these requirements.

1.5 Fleet Guidance Objectives and Document Organization

This fleet guidance document supports the planning phase of a comprehensive fleet management framework summarized in Figure 1-1. Relevant requirements are explained in each chapter of this document, helping an agency determine whether the requirements are applicable to its fleet and, if so, how to measure, reach, and exceed performance goals.

¹ <https://fastweb.inl.gov>

² <https://federalfleets.energy.gov/FleetDASH/>

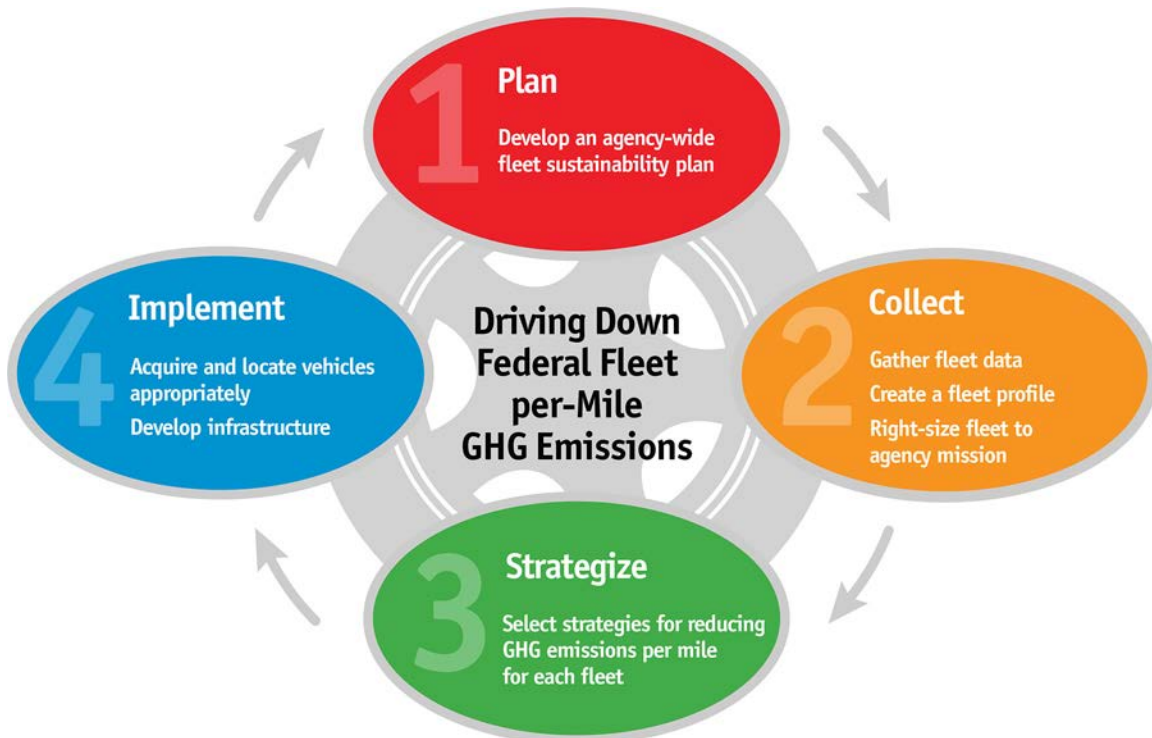


Figure 1-1. Annual fleet strategic planning and implementation process framework for agencies

Agencies should follow and organize their plans around this fleet management framework as follows:

- **Plan.** Develop an agency-wide fleet plan to reduce overall and fleet-wide per-mile GHG emissions by right-sizing fleets to the mission, increasing fleet fuel efficiency, deploying ZEVs, PHEVs, and related charging and refueling infrastructure, increasing alternative fuel use, and improving fleet management (see Table 1-1).
- **Collect.** Compile and manage accurate and comprehensive asset-level fleet data to enable the agency to optimize fleet decision making, establish a baseline fleet profile, and use that profile to right-size the fleet's inventory and vehicle sizes to the agency mission.
- **Strategize.** Evaluate strategies to reduce GHG emissions absolutely and to reduce per-mile GHG emissions, including right-sizing fleets to the mission, increasing fleet fuel efficiency, increasing use of alternative fuels (including biodiesel blends), and exploring alternative strategies that reduce the need for fleet vehicles (such as bicycles, mass transportation, agency shuttles, and transportation on demand) or otherwise improve fleet vehicle management. Evaluate minimum vehicle requirements needed to support the agency mission at each fleet location and identify opportunities to eliminate vehicles that exceed requirements.
- **Implement.** Acquire vehicles to support absolute GHG emissions and per-mile GHG emission reduction strategies, ensure the agency's fleet as a whole and individual vehicles are right-sized to the agency mission, support alternative fuel and charging infrastructure development where possible, monitor and report performance in meeting overall fleet and fleet-wide per-mile GHG emission reduction targets, identify deficiencies, and refine strategies.

Table 1-1 demonstrates how each chapter of this document fits into the framework, how GHG emission reduction strategies fit into each chapter, and how each chapter relates to certain federal fleet requirements. The Handbook provides further details regarding implementation of other related statutory federal fleet requirements and how to coordinate their implementation with the requirements of E.O. 13693.

Table 1-1. Greenhouse Gas Emission Reduction Strategies and Relevant Federal Fleet Requirements

GHG Reduction Plan or Strategy	Additional Information Source	Fleet Requirement	Statute or Executive Order	Requirement
Overarching E.O. 13693 Federal Fleet Goals				
Reduce fleet-wide per-mile GHG emissions	Guidance Chapter 3	Reduction in fleet-wide per-mile GHG emissions	E.O. 13693, Sec. 3(g)(ii)	Not less than 4 percent total reduction from FY 2014 to end of FY 2017 Not less than 15 percent total reduction from FY 2014 to end of FY 2021 Not less than 30 percent total reduction from FY 2014 to end of FY 2025
Reduce overall fleet GHG emissions	Guidance Chapters 2 & 3	Reduction in annual overall fleet GHG emissions	E.O. 13693, Sec. 2	Reduce fleet GHG emissions as part of agency-established scope 1 and 2 reduction targets for FY 2008 to FY 2025
Plan, Collect, Strategize, and Implement				
Develop agency-wide fleet management plan	Guidance Chapter 2	Agency plan to achieve fleet goals	E.O. 13693, Sec. 14	Develop (and update annually) a fleet management plan (FMP) to achieve the E.O. 13693 fleet goals
Develop agency profile and right-size fleets	Guidance Chapter 5	Vehicle Allocation Methodology (VAM)	E.O. 13693, Sec. 3(g)(i)	Establish a structured VAM to determine the appropriate size and number of vehicles
Increase fleet fuel efficiency	Guidance Chapter 2 & Handbook	Reduction in fleet-wide per-mile and annual overall fleet GHG emissions	See E.O. 13693 overall fleet and fleet-wide per-mile GHG emission reduction requirements above	
Acquire AFVs and use alternative fuel		Alternative fuel use in AFVs	EPAct 2005, Sec. 701	Dual-fueled vehicles must use alternative fuel unless waived due to non-availability or cost (subject to approval by DOE)
Use biodiesel blends (B20 or greater) in diesel vehicles		Alternative fuel infrastructure	EISA, Sec. 246	Every federal fleet fueling center must install a renewable fuel pump
Acquire electric vehicles (EVs)				
Implement sustainable vehicle acquisitions	Guidance Chapter 4	Acquisition of ZEVs and PHEVs	E.O. 13693, Sec. 3(g)(v)	20 percent of new passenger vehicle acquisitions must be ZEVs or PHEVs by FY 2020 and 50 percent by FY 2025
	Guidance Chapter 6	Vehicle telematics deployment	E.O. 13693, Sec. 3(g)(iii)	Deploy vehicle telematics in all new LDV and MDV acquisitions no later than March 19, 2017 (except where the agency determines that it is not appropriate)
	Handbook	Acquisition of AFVs	EPAct 1992	At least 75 percent of LDVs acquired in MSAs/CMSAs must be AFVs
		Acquisition of low GHG-emitting vehicles	EISA, Sec. 141	Prohibits agencies from acquiring LDVs or passenger MDVs that are not low-GHG-emitting vehicles, unless no model is available that meets the fleet’s functional needs or the agency has taken alternative measures to reduce GHG emissions
Monitor fleet performance	Handbook	Annual agency compliance report	EPAct 1992 ECRA 1998	Each agency must report to Congress annually on compliance with federal fleet AFV acquisition requirements
Reevaluate strategies	Handbook	Agency implementation plans	See E.O. 13693 fleet plan requirements above	

1.6 Determining Applicability of Executive Order 13693 Requirements

The remaining chapters of this document are intended to assist agencies with fleet management planning related to E.O. 13693, achieving fleet-wide per-mile GHG emission reductions, attaining ZEV and PHEV acquisitions goals, identifying an optimum fleet inventory, and deploying vehicle telematics. This section provides more detail in determining which agencies and fleets are subject to E.O. 13693 requirements.

1.6.1 Federal Agency Fleets Subject to Executive Order 13693 Requirements

The E.O. 13693 federal fleet requirements apply only to certain vehicles owned, operated, leased, or otherwise controlled by a federal agency.

What is a federal agency?

Under E.O. 13693, an “agency” is an executive agency as defined in 5 U.S.C. § 105 (excluding the Government Accountability Office [GAO]), which defines “Executive agency” as an “Executive department, a Government corporation, and an independent establishment,” as defined in 5 U.S.C. §§ 101, 103, and 104. Compliance with the federal fleet provisions of E.O. 13693 is recommended but not required for any fleet that is owned, operated, leased, or otherwise controlled by a component of the federal government that does not qualify as an “agency.”

How does an agency determine if its vehicle fleets are subject to the E.O. 13693 requirements?

E.O. 13693 **applies to an agency’s entire fleet of vehicles** that are owned, operated, leased, or otherwise controlled by the agency so long as the agency owns, operates, leases, or otherwise **controls at least one fleet** that:

- Includes **20 or more LDVs within the United States** that are **not exempt vehicles** (exempt vehicles are discussed in Section 1.6.3 below).

AND

- Is located in a metropolitan statistical area (MSA) or consolidated metropolitan statistical area (CMSA), as established by the Bureau of the Census, with a 1980 population of more than 250,000.

AND

- Is centrally fueled or capable of being centrally fueled.

The federal fleet provisions of E.O. 13693 **do not apply** if:

- A federal agency does not own, operate, lease, or otherwise control a fleet of 20 or more LDVs (excluding exempt vehicles) that is located in a 1980 MSA/CMSA and centrally fueled or capable of being centrally fueled.

OR

- The fleet is not owned, operated, leased or otherwise controlled by an agency as defined by 5 U.S.C. § 105.

OR

- The fleet is part of the legislative or judicial branches of the federal government.

1.6.2 Vehicles Subject to Executive Order 13693 Requirements

An agency's **entire fleet of vehicles** (including GSA-leased, agency-owned, or commercially leased vehicles) is subject to these requirements, including federal LDVs, MDVs, and heavy-duty vehicles (HDVs), ***except those vehicles that may be exempt*** from E.O. 13693 requirements, as listed in Appendix A. Additionally, certain contractor or subcontractor vehicles shall be subject to these requirements, consistent with existing vehicle reporting in FAST. See FAST guidance for more information.

Government-Owned, Contractor-Operated Vehicles

Agencies shall ensure that all government-owned, contractor-operated (GOCO) vehicles and facilities comply with the E.O. 13693 requirements. These requirements and goals should be included in each contract. Each agency shall ensure contracts entered into for contractor operation of government-owned facilities or vehicles require the contractor to comply with these fleet requirements with respect to such facilities or vehicles to the same extent as the agency would be required to comply if the agency operated the facilities or vehicles.

Appendix A lists the **vehicles that agencies may determine to be exempt** from the E.O. 13693 requirements. Under E.O. 13693, vehicles that agencies may exempt from the E.O. 13693 requirements are similar to those under EPCA 1992 (42 U.S.C. § 13212(b)(3)). However, each agency should avoid exempting these vehicles—to the maximum extent practicable—to expand the scope of the agency fleet for which it improves overall sustainability.

1.6.3 Classifying Law Enforcement Vehicles

Agencies should not automatically exempt any vehicle from requirements solely because it is used by law enforcement (LE) personnel or employs special equipment. Agencies are strongly encouraged to classify the appropriate tier (i.e., LE 1, LE 2, and LE 3) for each law enforcement vehicle and determine whether or not to exempt each from E.O. 13693 requirements. Agencies should classify their law enforcement vehicles by one of the following three groupings (see *GSA Bulletin FMR B-33, Motor Vehicle Management*), and are strongly encouraged not to exempt LE 3 law enforcement vehicles from the E.O. 13693 requirements to expand the number of vehicles within the agency fleet for which it improves overall sustainability:

- **LE 1.** Vehicles configured for apprehensions, arrests, law enforcement, police activities, or dignitary protection; and assigned to pursuit, protection, or off-road duties. An LE 1 vehicle must be equipped with heavy-duty components to handle the stress of extreme maneuvers and have the horsepower required to achieve the speeds necessary to perform these functions.
- **LE 2.** Vehicles configured to perform intelligence, investigations, security, and surveillance activities. An LE 2 vehicle may be unmarked or marked. An LE 2 vehicle is not expected to perform pursuit or protection operations either on- or off-road and does not require the heavy-duty components found on an LE 1 vehicle.
- **LE 3.** Standard vehicles of any make or model that may be used for associated law enforcement operations, including administrative functions such as courier, mail delivery, employee shuttle, or other functions not performed by LE 1- and LE 2-tiered vehicles. An LE 3 vehicle is not expected to perform pursuit or protection operations either on- or off-road.

1.7 Agency Responsibilities Related to Implementation of Executive Order 13693

Table 1-2 outlines general responsibilities related to the implementation of E.O. 13693 and this guidance.

Table 1-2. Agency Responsibilities Related to the Implementation of Executive Order 13693

Chief Sustainability Officer (CSO) ³	Agency Fleet Manager	Fleet Location Manager
<ul style="list-style-type: none"> • Ensure agency accountability for achieving the goals and providing the appropriate stewardship and oversight of fleet data and procurement activities • Monitor and report (annually) conformance with the federal fleet requirements • Prepare and submit the fleet component of the agency Strategic Sustainability Performance Plan (SSPP) • Approve the acquisition of new vehicles, EPA 2005 § 701 vehicle waiver requests, and fleet data submissions (including FAST) 	<ul style="list-style-type: none"> • Facilitate the implementation of GHG emission reduction strategies fleet-wide • Ensure the overall agency fleet is right-sized to the fleet's mission • Provide support to fleet managers at each agency fleet location in selecting GHG emission reduction strategies • Review and approve fleet location site-specific strategies • Consolidate individual site-specific strategies into an overall fleet GHG emission reduction strategy • Regularly monitor the performance of the overall agency fleet in reducing GHG emissions and identify corrective actions needed to improve performance • Ensure the overall agency fleet meets or exceeds all applicable fleet requirements, including agency-specific goals and requirements • Refine the strategy based on changes in fleet characteristics and performance 	<ul style="list-style-type: none"> • Ensure each fleet is right-sized to that location's mission • Determine the optimal GHG emission reduction strategy for that location (based on evaluating the fleet characteristics and requirements at the site) • Implement the optimal GHG emission reduction strategy at the fleet location • Monitor the performance of the fleet location in reducing GHG emissions • Ensure the fleet location is in compliance with all applicable fleet requirements • Refine the strategy based on changes in fleet characteristics, performance, and location mission

Section 10 of E.O. 13693 further requires EPA and GSA regional offices—in coordination with each agency's national office and the Federal Executive Boards (FEBs)—to convene regional interagency groups in major federal cities across the United States to identify and address regional implementation of the executive order. In partnership, these entities should implement strategies to leverage the collective resources of agencies and develop protocol to share fueling infrastructure to support the adoption and use of AFVs, ZEVs, PHEVs, and compressed natural gas (CNG) vehicles.

³ The CSO may delegate these duties to the relevant agency fleet manager or other official in accordance with the agency's authority to delegate.

2 Agency Fleet Planning Requirements

2.1 Overview of Requirements

Section 14 of E.O. 13693 requires that each agency develop, implement, and annually update Strategic Sustainability Performance Plans (SSPPs) that include how the agency will achieve its GHG reduction targets. More information on agency SSPP requirements is provided by CEQ and by OMB (which annually approves agencies' plans).

2.2 Federal Fleet Vehicle and Sustainability Management Planning

The fleet component of an agency's SSPP should address how the agency plans to meet the federal fleet requirements associated with E.O. 13693, including reducing fleet GHG emissions. The SSPP must include, as an appendix, the **Fleet Management Plan (FMP)**. Each agency must submit annually an updated SSPP (including the FMP) to CEQ and OMB by June 30.

The FMP incorporates the VAM-related data that agencies submit annually to FAST, describes how the agency will achieve its optimal fleet inventory, and reports progress toward that inventory. The FMP also lists the specific strategies the agency will implement to achieve the E.O. 13693 per-mile GHG emission reduction targets, and to meet or exceed other relevant fleet requirements in future years. Instructions on preparing an FMP, completing a VAM study, and submitting annual VAM data are provided in Chapter 5 of this document and are available from the FAST website. Guidance to help agencies identify and implement strategies to achieve GHG emission reduction targets is provided in Sections 2.3 and 2.4 of this document.

2.3 Developing an Agency-Specific Fleet Plan to Reduce GHG Emissions

In developing a GHG emission reduction plan for an agency fleet, the first step is to align the fleet component goals with the agency's SSPP. Goals may include achieving the E.O. 13693 fleet targets, complying with other fleet requirements, saving money, and/or investing in an agency fleet or infrastructure. Once set, these overarching goals must be aligned with existing regulatory requirements, and the agency should set quantifiable annual targets for fleet GHG reduction, AFV acquisition (including ZEVs and PHEVs), renewable fuel infrastructure development, as well as other targets that the agency may require of itself.

Once an agency has identified its primary goals and annual targets, the agency should determine the appropriate combination of the core principles in Figure 2-1 and corresponding implementation strategies. These principles and strategies should help the agency reach per-mile GHG emission reduction targets and are described in Section 2.4 of this document.

2.4 Core Principles of Greenhouse Gas Emission Reduction

In order to achieve the vision of E.O. 13693, meet mission-critical needs, and comply with all federal goals and mandates, an agency can reduce its GHG emissions through the appropriate combination of the three core principles displayed in Figure 2-1. These strategies provide a framework for an agency to use when developing a strategic plan that can be specifically tailored to match the agency's fleet profile and meet its mission. Agency fleet managers should evaluate GHG emission reduction strategies and tactics for each fleet location based on an evaluation of site-specific characteristics, including availability of alternative fuel, fleet size, and fleet vehicle composition. In addition, agency fleet managers should employ best practices such as right-sizing the agency fleet to the mission need.

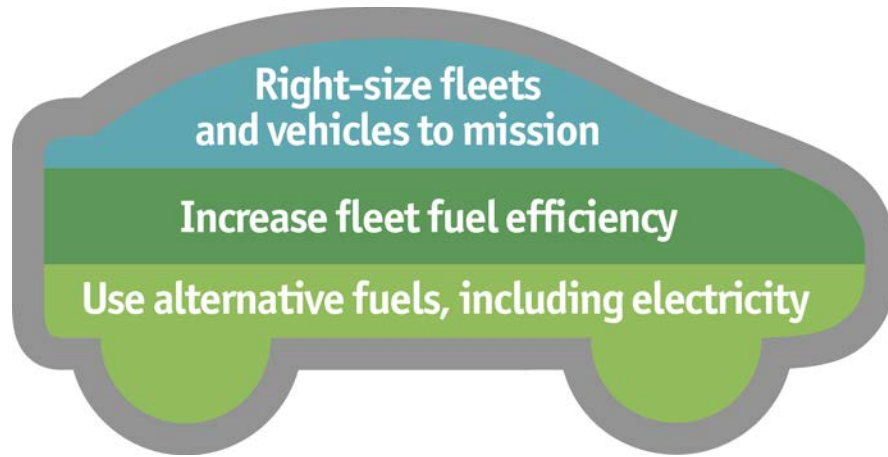


Figure 2-1. The core principles of greenhouse gas emission reduction

2.4.1 Principle I—Right-Size Fleets and Vehicles to Mission

Right-sizing is a critical element of good fleet management that helps agencies reduce fleet GHG emissions and operating costs. Agencies use right-sizing to identify and eliminate inefficient vehicles and replace them, if necessary, with vehicles that generate lower per-mile GHG emissions. To right-size its fleet, an agency must (1) compile its vehicle inventory and understand how its vehicles are used (e.g., mileage, purpose, etc.), and (2) analyze the fleets’ operational (or mission) needs, while identifying opportunities to eliminate unnecessary, inefficient, and/or nonessential vehicles from the agency’s fleet inventory.

2.4.1.1 Determining Optimum Fleet Inventory with a Vehicle Allocation Methodology

A structured VAM process provides a framework for right-sizing an agency’s fleet. The E.O. 13693 Implementing Instructions Section III (C)(3) require agencies to complete a VAM study at least every five years, or more frequently if the agency’s mission or resource requirements change. A VAM study helps agencies determine the optimum fleet inventory and reduce agency vehicle fleet costs, ensuring fleets are correctly sized in terms of numbers and that the vehicles are of the appropriate type and size for accomplishing agency missions. The VAM assists agencies with developing a vehicle acquisition and management plan that supports GHG emission reduction through the appropriate acquisition, placement, and use of higher efficiency and alternative fuel vehicles.

Section 3(g)(i) of E.O. 13693 further requires agencies to complete an annual VAM report to track progress in meeting the VAM optimum fleet inventory targets. This report should be a component of the overall FMP—which is submitted as an appendix to the SSPP—and should include fleet inventory size (by vehicle class and fuel type), such that fleet size corresponds with agency mission requirements. VAM requirements are addressed in Chapter 5 of this guidance document.

The goal for an agency in optimizing its fleet is to ensure every vehicle (1) is as fuel efficient and cost effective as possible, (2) meets the mission to which it is assigned, and (3) enables the agency to meet regulatory requirements and achieve its overarching fleet management goals. Evolving missions, priority budget requirements and variations, and improving automotive technology make this an ever-changing target, such that agencies should consider every possible cost- or fuel-saving solution to meet mission needs.

Optimizing the fleet inventory using a VAM is a critical component of efforts to achieve the E.O. 13693 fleet-wide GHG per-mile emission reduction and ZEV and PHEV requirements, as well as other related statutory federal fleet requirements (e.g., acquisition of AFVs and low GHG emitting vehicles). The fleet manager should

regularly compare the existing fleet to the optimal fleet and ensure that the agency is working to acquire and deploy the vehicles best suited to achieving all required and additional fleet management goals while disposing of unneeded and inefficient models.

2.4.2 Principle II—Increase Fleet Fuel Efficiency

Encouraging agency fleet fuel efficiency is one of the key goals of the E.O. 13693 fleet requirements. Fleet managers can increase vehicle fuel efficiency by:

- **Acquiring higher fuel economy vehicles** that match the fleet’s mission needs
- **Acquiring HEVs, ZEVs, and PHEVs** that are more fuel efficient (i.e., have higher fuel economy) than the vehicles they replace
- **Maintaining vehicles to improve fuel economy** by implementing best practices such as maintaining recommended tire pressure and conducting preventive maintenance
- **Driving more efficiently** by implementing best practices such as observing the speed limit, removing excess weight, using cruise control, and mapping more efficient, fuel-saving routes
- **Avoiding excessive idling** by implementing best practices such as turning off engines when vehicles are idle to eliminate unneeded fuel use, and adding idling mitigation systems to power the vehicle’s onboard systems or equipment without using the engine.

Fleet managers should also note that they can maximize overall fleet fuel efficiency gains and GHG emission reductions by applying the measures above to increase the fuel efficiency of their least-efficient vehicles (e.g., MDVs and HDVs).

2.4.3 Principle III—Use Alternative Fuels, Including Electricity

One effective strategy to reduce GHG emissions is to displace petroleum use with alternative fuels, including electricity, E85, neat (100 percent) biodiesel,⁴ hydrogen, compressed natural gas (CNG), liquefied natural gas (LNG), and liquefied petroleum gas (LPG). Whenever possible, agencies should use alternative fuels—which in nearly all instances have lower per-mile GHG emissions than conventional fuels⁵—and identify the type of AFV and infrastructure best suited to each fleet based on the fleet location characteristics:

- **EVs, including battery-electric vehicles and PHEVs, and their charging infrastructure** are suitable for most fleet locations, especially those without access to other alternative fuels. Sections 4.5 and 4.6 of this guidance document provide details to assist fleet managers with planning for deployment of EVs, including suitable vehicle and location characteristics, as well as selection, siting, and installation of associated charging infrastructure.

⁴ The definition of alternative fuels (42 U.S.C. 13211(2), Section 301(2) of EPCA 1992) includes pure biodiesel (B100) but not biodiesel blends. However, agencies may count the pure biodiesel component of biodiesel blends greater than 20 percent (B20 or greater) toward the reduction target for fleet GHG emissions.

⁵ CO₂ emissions from use of ethanol in E85 and biodiesel (including biodiesel in blends greater than 20 percent) are considered biogenic emissions and excluded in calculating fleet GHG emissions. Note that methane (CH₄) and nitrous oxide (N₂O) emissions from use of these fuels are not considered biogenic emissions and are treated in the same manner as emissions for fossil fuels.

- **AFVs that use E85, CNG, hydrogen, and other alternative fuels that require dedicated infrastructure** should be placed at fleet locations where alternative fuel is available or at high-use locations where alternative fuel sites are planned in the near-term. In order to promote increased alternative fuel consumption by AFVs in the federal fleet, Section 701 of EPAct 2005 (42 U.S.C. § 6374(a)(3)(E)) requires federal agencies to use only alternative fuel in its dual-fueled AFVs, except where the vehicles have received a waiver from DOE due to the local unavailability of alternative fuel or fuel that is unreasonably more expensive than gasoline. This means, for example, that if E85 infrastructure is available at or near a fleet location, fleet E85 flex fuel vehicles (FFVs) operating at that location are required to refuel solely with E85 using that infrastructure. Agencies are encouraged to reduce the number of annual waivers by deploying alternative fuel infrastructure near high concentrations of dual fueled vehicles waived due to the unavailability of fuel.
- **Biodiesel blends, which require dedicated infrastructure but can be used in conventional diesel vehicles**, are ideal for locations with large numbers of diesel MDVs and HDVs and high diesel fuel use.

To maximize GHG emission reductions, agencies should support strategies to increase alternative fuel use by:

- **Acquiring AFVs**, including ZEVs and PHEVs, and placing them in or near areas with existing or planned alternative refueling sites (agencies should ensure alternative fuel infrastructure, including charging infrastructure and the associated fuel necessary to support dedicated AFVs, is in place before accepting delivery of vehicles); and by running dual-fueled vehicles on alternative fuel
- **Installing alternative fuel infrastructure (including charging infrastructure)** in fleet locations with the highest AFV concentrations that use that fuel type
- **Communicating and coordinating with nearby fleets** (both public and private sector) to aggregate demand for alternative fuel.

To support the ZEV and PHEV acquisition requirements, agencies should deploy charging stations—also referred to as electric vehicle supply equipment (EVSE)—with vehicle-level data reporting capabilities at federal facilities. Before procuring and installing charging stations, an agency should first determine the type of EVSE best suited for its needs and fleet location characteristics. Considerations should include:

- Mission needs
- Makeup of the current and future EV fleet
- Charging speed, frequency, and level necessary to support mission needs
- Access for federal employees and public
- Data and payment requirements
- Provisions for charging fleet vehicles in parking leases and other vendor contracts
- Charging station location and design
- Safety and security.

3 Federal Fleet Greenhouse Gas Emission Reduction Requirements

3.1 Overview of Requirements

To assist in reducing fleet GHG emissions, E.O. 13693 establishes a per-mile GHG emissions performance metric for federal fleets. Section 3(g)(ii) of E.O. 13693 requires federal agencies to reduce fleet-wide per-mile GHG emissions, relative to agency baselines for FY 2014, by:

- Not less than 4 percent by the end of FY 2017
- Not less than 15 percent by the end of FY 2021
- Not less than 30 percent by the end of FY 2025.

3.2 Greenhouse Gas Emission Basics for Federal Fleet Managers

Vehicles generate GHGs when fuels are combusted. Scope 1 GHG emissions include direct GHG emissions from sources that are owned or controlled by the federal agency. This includes certain contractor or subcontractor vehicles, as discussed in Chapter 1.6. Generally, GHG emissions generated from federal fleet vehicles with internal combustion engines are classified as scope 1 GHG emissions.

Scope 2 GHG emissions result from the generation of electricity, heat, or steam purchased by a federal agency. Generally, GHG emissions generated from the production of electricity purchased by a federal agency that is used to power federal fleet vehicles are classified as scope 2 GHG emissions.

Although each agency is required to address scope 3 GHG emissions, these emissions are from sources not directly controlled by a federal agency but rather related to agency activities, such as employee travel and commuting. Therefore, by definition, most federal fleet vehicles do not generate scope 3 GHG emissions.

The GHG emissions associated with fuel depend on the volume of fuel combusted, the density of the fuel, the life cycle carbon emissions of the fuel, and the fraction of carbon that is oxidized to GHGs. Therefore, GHG emissions for the federal fleet are measured based on the amount and type of fuel burned in federal fleet vehicles.

Emission factors for calculating tailpipe GHG emissions are based on CEQ's *Federal Greenhouse Gas Accounting and Reporting Guidance, Revision 1: June 4, 2012*, or the most current version of that document, and available in FEMP's *Annual Greenhouse Gas and Sustainability Data Report*. Separate emission factors are developed for each fuel type for each gasoline gallon equivalent (GGE) of fuel consumed. Table 3-1 provides the tailpipe GHG emission factors (as of FY 2016) in grams of carbon dioxide equivalents (CO₂e) per GGE for each conventional and alternative fuel used in federal fleet vehicles. These factors, combined with data reported by agencies in the FAST online tracking system, will be used to calculate agency fleet GHG emissions.

Table 3-1. Greenhouse Gas Emission Factors by Fuel Type

Fuel Type	GHG Emission Factor (g CO₂e/GGE)	Biogenic GHG Emission Factor (g CO₂e/GGE)^a
Conventional Fuels		
Gasoline	8,859.287	–
Diesel	9,251.452	–
Alternative Fuels		
Biodiesel (B100)	7.535	9,230
B20	7,402.669	1,846
E85	1,335.298	7,272
CNG	6,634.350	–
LNG	6,634.350	–
LPG	7,749.116	–
Electricity	0	–
Hydrogen	0	–

^a CO₂ emissions from the biofuels portion of the fuel are known as biogenic emissions, and are not counted in federal fleet GHG emissions.

For most alternative fuels, GHG emission factors are lower than conventional fuels and therefore effective in reducing fleet overall and per-mile GHG emissions. Ethanol blends greater than 85 percent (E85) and biodiesel blends greater than 20 percent (B20 and greater) have lower GHG emissions than gasoline and diesel, respectively. Because the ethanol and biodiesel components of these blends are derived from biogenic sources, the CO₂ emissions from these components are not counted in calculating fleet GHG emissions. (Note that CO₂ emissions from the petroleum component of these fuels and all CH₄ and N₂O emissions from use of these fuels are included in calculating fleet GHG emissions). Hydrogen and electricity used in ZEVs and PHEVs generate no tailpipe GHG emissions and therefore do not contribute to federal fleet GHG emissions.

3.3 Agency per-Mile Greenhouse Gas Emission Reduction Requirements

Each agency that is subject to the E.O. 13693 requirements must reduce its fleet-wide per-mile GHG emissions by a minimum of 4 percent through the end of FY 2017, 15 percent through the end of FY 2021, and 30 percent through the end of FY 2025, relative to the FY 2014 baseline (see Table 3-2). This guidance also establishes interim milestones to help each agency assess annual progress toward meeting the FY 2017, FY 2021, and FY2025 requirements. Although not E.O. 13693 requirements, CEQ and OMB will use these interim milestones to evaluate agencies' annual progress toward achieving the fleet-wide per-mile GHG emission reduction goals.

Table 3-2. Executive Order 13693 Greenhouse Gas Emission Reduction per-Mile Requirements and Interim Milestones

Fiscal Year	E.O. 13693 Requirement	Interim Milestone
2014	Baseline	
2015	–	–
2016	–	2.00%
2017	4%	–
2018	–	6.75%
2019	–	9.50%
2020	–	12.25%
2021	15%	–
2022	–	18.75%
2023	–	22.50%
2024	–	26.25%
2025	30%	–

3.3.1 Calculating Fleet-Wide per-Mile Greenhouse Gas Emissions

Once agencies report data in FAST, FAST will automatically calculate an agency’s fiscal year fleet-wide per-mile GHG emissions. Fleet managers are not required to calculate their agency’s fleet-wide per-mile GHG emissions for compliance. Nonetheless, the details used to measure compliance are provided below to help fleet managers understand the components they can manage to improve performance.

The calculation of fleet-wide per-mile GHG emissions is as follows: the total fiscal year GHG emissions (in grams of CO₂e) generated by all subject vehicles in an agency’s fleet divided by the total fiscal year miles driven by those vehicles.

$$\text{Fleet-wide per-mile GHG emissions (g CO}_2\text{e/mile)} = \frac{\text{Subject GHG emissions (g CO}_2\text{e)}}{\text{Total mileage for subject vehicles (miles)}}$$

The methodology used to calculate subject GHG emissions for compliance, which include emissions of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) for the federal fleet, is based on the volume and type of fuel burned in federal fleet vehicles. GHG emissions are calculated individually for each fuel type by multiplying the subject fuel consumption (in GGE) by a fuel-specific GHG emission conversion factor (CF) in grams of CO₂e emitted per GGE.

$$\text{Subject GHG emissions (for "N" different types of fuel)} = (\text{GGE}_{\text{FuelType1}} \times \text{CF}_{\text{FuelType1}}) + (\text{GGE}_{\text{FuelType2}} \times \text{CF}_{\text{FuelType2}}) + (\text{GGE}_{\text{FuelType3}} \times \text{CF}_{\text{FuelType3}}) + \dots + (\text{GGE}_{\text{FuelTypeN}} \times \text{CF}_{\text{FuelTypeN}})$$

The methodology to calculate fleet-wide per-mile GHG emissions from the combustion of fuels in subject federal fleet vehicles is summarized in Table 3-3.

Table 3-3. Steps To Calculate per-Mile Greenhouse Gas Emissions from Federal Fleet Vehicles

Step	Action	Recommendations
1	Calculate the annual volume (in GGE) of subject fuel consumed by type	<ul style="list-style-type: none"> Use fiscal year volumes of petroleum and alternative fuel in GGE by each fuel type reported in FAST Exclude fuel use by vehicles exempt from the E.O. 13693 requirement (e.g., law enforcement, emergency vehicle, and foreign fuel use)
2	Determine the appropriate grams of CO ₂ e per GGE emission factors for each fuel type	<ul style="list-style-type: none"> Find the grams per GGE CO₂e emission factors for each fuel type reported in FAST, which are provided in the Handbook (note that biogenic CO₂ emissions from biofuels are already excluded from these factors) Include only fuels subject to the E.O. 13693 requirement (e.g., exclude law enforcement, emergency vehicle, and foreign fuel use)
3	Calculate the total subject CO ₂ e emissions	<ul style="list-style-type: none"> Multiply the annual subject fuel use (in GGE) for each fuel type by the corresponding grams per GGE CO₂e emission factors
4	Calculate total subject mileage	<ul style="list-style-type: none"> Use fiscal year mileage by each vehicle type reported in FAST Include mileage in low-speed electric vehicles (LSEVs) Exclude vehicles exempt from the E.O. 13693 requirement (e.g., exclude law enforcement, emergency vehicle, and foreign fuel use)
5	Calculate fleet-wide per-mile GHG emissions	<ul style="list-style-type: none"> Divide the total subject CO₂e emissions calculated in step 3 by the total subject mileage calculated in step 4

3.3.2 Types of Fuels Used to Calculate Subject Greenhouse Gas Emissions

Fuel that is **counted** in calculating subject GHG emissions includes:

- **Petroleum** (gasoline, diesel, and diesel component of biodiesel blends) used in subject vehicles in the United States
- **Alternative fuel** (see section 3.3.3) used in subject vehicles in the United States
- **Biodiesel component of biodiesel blends** greater than 20 percent used in subject vehicles in the United States
- **All electricity used in LSEVs** in the United States.

Fuel that is **not counted** in calculating subject GHG emissions includes:

- **Petroleum** (gasoline, diesel, and the diesel component of biodiesel blends) **used in exempt vehicles** or outside the United States
- **Alternative fuel** (see section 3.3.3) **used in exempt vehicles** or outside the United States.

3.3.3 *Fuels Classified as Alternative Fuels*

Alternative fuels are defined by Section 301 of EPA Act 1992⁶; the Secretary of Energy may modify this definition by rule. As of the date of this guidance document, the following fuels are defined or designated as alternative fuels:

- Methanol, denatured ethanol, and other alcohols
- Mixtures of 85 percent or more of methanol (M85), denatured ethanol (E85), and other alcohols with gasoline or other fuels
- Natural gas and liquid fuels domestically produced from natural gas (e.g., CNG and LNG)
- Liquefied petroleum gas (i.e., LPG or propane)
- Coal-derived liquid fuels
- Electricity (including electricity from solar energy)
- Biodiesel (B100)
- Fuels (other than alcohol) derived from biological materials
- Hydrogen
- P-Series fuels
- Any other alternative fuel that the Secretary of Energy determines by rule is substantially not petroleum and would yield substantial energy security and environmental benefits.

Please note that the alternative fuels listed above will provide different levels of GHG emission reduction compared to use of conventional fuels.

3.3.4 *Determining the Fiscal Year 2014 Fleet-Wide per-Mile Greenhouse Gas Emissions Baseline*

DOE calculated FY 2014 baselines for each agency using a methodology that ensures consistency across agencies. The primary goal in establishing each agency's baseline was to ensure that the calculated values were related to 2014 national averages for vehicle per-mile GHG emissions and would allow agencies to achieve the intent of E.O. 13693. Therefore, in establishing baseline values for agencies covered by E.O. 13693, DOE used: (1) the Federal Highway Administration's (FHWA's) most recent (2013) national fleet average miles per gallon by vehicle class (LDV, MDV, HDV); (2) the agency's reported FY 2014 inventory in FAST; and, (3) the agency's reported FY 2014 fuel use in FAST.

Agency Baseline

Each agency must review its FY 2014 subject fuel consumption and vehicle inventory figures in FAST for accuracy and work with DOE to determine its appropriate baseline. Subject fuel consumption may be referred to in FAST as covered petroleum.

The steps used to calculate the FY 2014 fleet-wide per-mile GHG emissions for each agency are as follows.

1. Determine the number of domestic subject LDVs, MDVs, and HDVs in the agency's FY 2014 inventory reported in FAST (excluding exempt vehicles as described in Appendix A).

⁶ Public Law 102-486, 42 U.S.C. 13211(2)

2. Calculate the agency fleet average miles per GGE using inventory data and the FHWA Statistics 2013 (latest) national miles per gallon averages for LDVs and single-unit trucks (for MDVs and HDVs).
3. Calculate the agency-specific average grams of CO₂ emission equivalents (CO₂e) per GGE. Emissions are calculated using FAST-reported subject FY 2014 fuel data and GHG emission factors by fuel type (excluding fuel from exempt vehicles).
4. Calculate for each agency the grams CO₂e per-mile baseline by dividing each agency's grams CO₂e per GGE emissions in Step 3 by the average fleet miles per GGE in Step 2.

3.3.5 Example: Agency with Fiscal Year 2014 Baseline of 500 Grams CO₂e per Mile

Table 3-4 and Figure 3-1 show an example of an agency's target per-mile GHG emissions (requirements and interim milestones) relative to its FY 2014 baseline.

Table 3-4. Calculation of Example Fleet-Wide per-Mile Greenhouse Gas Emissions Requirements and Interim Milestones Based on a Fiscal Year 2014 Baseline of 500 Grams CO₂e per Mile

Fiscal Year	FY 2014 per-Mile GHG Emissions Baseline (g CO ₂ e/mile)	Per-Mile GHG Emissions Reduction Requirement (Percentage of FY 2014 Baseline)	Maximum per-Mile GHG Emissions Reduction Requirement (g CO ₂ e/mile)	Per-Mile GHG Emissions Interim Milestone (Percentage of FY 2014 Baseline)	Maximum per-Mile GHG Emissions Interim Milestone (g CO ₂ e/mile)
2014 (Baseline)	500	Not Applicable (Baseline)	–	–	–
2015	500	–	–	–	–
2016	500	–	–	2.00%	490.0
2017	500	4%	480	–	–
2018	500	–	–	6.75%	466.3
2019	500	–	–	9.50%	452.5
2020	500	–	–	12.25%	438.8
2021	500	15%	425	–	–
2022	500	–	–	18.75%	406.3
2023	500	–	–	22.50%	387.5
2024	500	–	–	26.25%	368.8
2025	500	30%	350	–	–

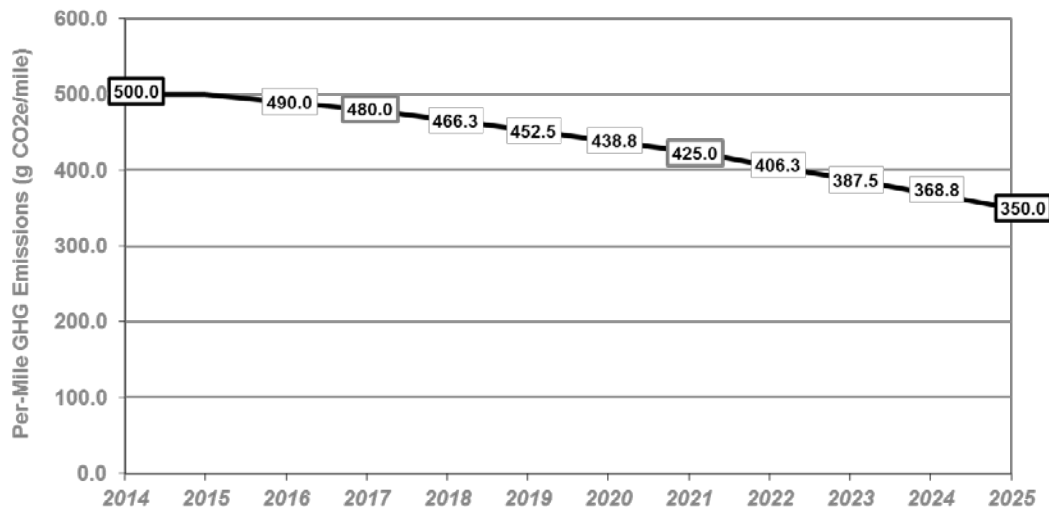


Figure 3-1. Example fleet-wide per-mile greenhouse gas emissions requirements and interim milestones based on a Fiscal Year 2014 baseline of 500 grams CO₂e per mile

3.4 Reporting

To track compliance with the fleet-wide per-mile GHG emission reduction requirements, federal agencies are required to collect accurate fuel consumption and mileage data from their fleets and report the information in FAST (agency per-mile GHG emissions performance will be calculated in FAST). Agencies must input annual vehicle acquisition, inventory, cost, mileage, and fuel use data into FAST each year; the reporting period begins on October 1 and closes on December 15. There are three data entry sections that agencies must complete during this period:

- **Section 1.** Vehicle inventory, acquisition (actual/planned/projected/forecast), and disposal (planned/projected/forecast) data
- **Section 2.** Actual fiscal year vehicle cost and mileage data by vehicle type
- **Section 3.** Actual fiscal year fuel cost and consumption data by fuel type.

E.O. 13693 requires agencies to collect and manage annual asset-level fleet data (rather than aggregated data) in a formal agency fleet management system, and submit relevant data managed in that system to FAST. For reporting of fleet data in FY 2017 and later years, agencies must upload vehicle asset-level data from their fleet management system to FAST using a standardized file structure, which includes vehicle inventory, cost, mileage and fuel use information for each vehicle (agencies are also encouraged to use this method for FY 2016 reporting). With the transition to reporting at the vehicle level, data will no longer be reported or managed using the three data entry sections. For more information on the executive order requirements to manage annual asset-level fleet data, see Chapter 7 of this guidance document.

Agencies should encourage their fleet managers to enter their data in FAST for FY 2016 well in advance of the December 15 deadline. For FY 2017 and later years, agencies should ensure the required vehicle-level information in their fleet management system is finalized and reported to FAST well in advance of the December 15 deadline. Timely reporting will allow agency headquarters personnel ample opportunity to review the data for completeness and accuracy prior to final submission.

3.5 Approaches to Fleet-Wide per-Mile Greenhouse Gas Emission Reduction

Each agency should consider how the GHG emission reduction strategies and framework can help meet its fleet-wide per-mile GHG emission reduction goals. Each agency has the flexibility to evaluate a variety of options to ensure its strategy best fits the mission and makeup of its fleet. The primary approaches include:

- **Acquire more fuel-efficient vehicles.** Establish a structured VAM and acquire the most fuel-efficient vehicles to accomplish your fleet’s mission at each fleet location.
- **Acquire HEVs, ZEVs, and PHEVs.** Acquire vehicles, such as those with hybrid electric, all-electric, or fuel cell drive trains, that have higher fuel economy than the vehicles they replace. Acquire PHEVs and all-electric vehicles—also referred to as battery electric vehicles (BEVs) or plug-in electric vehicles (PEVs)—to replace gasoline vehicles in locations near facilities and parking structures with charging infrastructure, and HEVs in areas with limited alternative refueling, or as appropriate.
- **Maintain vehicles to improve fuel economy.** Keep fleet vehicles properly maintained by conducting regularly scheduled preventive maintenance and keeping tires inflated to the recommended tire pressure.
- **Encourage more fuel-efficient driving behaviors.** Federal fleet vehicle drivers can improve fuel efficiency and reduce per-mile GHG emissions by driving responsibly, observing the speed limit, removing excess weight, using cruise control, mapping out the most efficient routes, and avoiding excessive idling.
- **Maximize use of alternative fuels.** Acquire and locate AFVs where alternative fuels are available, maximize use of alternative fuel in dual-fueled AFVs, and install alternative fuel infrastructure at high-use fueling centers. Maximize use of biodiesel (and biodiesel blends of 20 percent or higher) in diesel vehicles, particularly MDVs and HDVs, which typically have high fuel throughput, and install biodiesel infrastructure at high-use fueling centers.

4 Acquisition of Zero Emission Vehicles and Plug-In Hybrid Electric Vehicles

4.1 Overview of Requirements

E.O. 13693 requires that the annual number of ZEVs and PHEVs that federal fleets acquire represent at least 20 percent of new passenger vehicle acquisitions by FY 2020 and 50 percent by FY 2025.

4.2 Vehicles Subject to Executive Order 13693 Zero Emission Vehicle and Plug-In Hybrid Electric Vehicle Acquisition Requirements

The E.O. 13693 ZEV and PHEV acquisition requirements apply to **passenger vehicles** acquired each year by an agency's fleet (including GSA or agency owned or leased vehicles) **that are not exempt vehicles. Passenger vehicles are defined to include sedans or station wagons** designed primarily to transport people.⁷ Agencies are also encouraged to acquire ZEVs or PHEVs for vehicle types that do not meet the passenger vehicle definition and for vehicles that agencies determine to be exempt from the E.O. 13693 requirements, as these ZEV or PHEV acquisitions receive “double bonus” credit toward compliance with the vehicle acquisition requirement.

4.3 Agency Zero Emission Vehicle or Plug-In Hybrid Electric Vehicle Acquisition Requirements

Beginning in FY 2020, the number of ZEVs and PHEVs that each agency (i.e., those agencies subject to the E.O. 13693 requirements) acquires must represent at least 20 percent of new passenger vehicle acquisitions **during that fiscal year**. In FY 2025, the required number of ZEVs and PHEVs increases to 50 percent of new passenger vehicle acquisitions. However, in order to meet the GHG reduction targets, agencies should not wait until FY 2020 to begin acquiring these vehicles—and deploying any necessary charging infrastructure, or EVSE—and should find opportunities to incorporate these vehicles into their inventories where it makes the most sense to do so.

4.3.1 Definition of Zero Emission Vehicle and Plug-In Hybrid Electric Vehicle⁸

The E.O. 13693 implementing instructions define a **ZEV** as any vehicle that is capable of operational modes that produce **zero exhaust emissions** of any criteria pollutant (or precursor pollutant) or GHG. This definition includes:

- **All-electric vehicles**—also referred to as battery electric vehicles or BEVs—are powered primarily by an electric motor drawing current from a battery (with a capacity of at least 4 kilowatt-hours) which can be recharged from an external source of electricity.⁹
- **Fuel cell electric vehicles (FCEVs)**¹⁰ are propelled by power derived from one or more stacks of cells that combine oxygen with hydrogen fuel stored on board the vehicle to generate electricity.

⁷ Defined in Section 102-34.35 of the Federal Management Regulation (FMR) (41 CFR § 102-34.35) as “passenger automobile,” which has the same meaning here.

⁸ A list of ZEVs and PHEVs currently available from GSA can be found in the annual Alternative Fuel Vehicle Guide at <http://www.gsa.gov/portal/content/104224>.

⁹ Defined in Section 131 of Public Law 110-140, 42 U.S.C. 17011

¹⁰ Defined in Section 30B(b)(3) of the Internal Revenue Code of 1986 (26 U.S.C. 30B(b)(3))

PHEVs are defined as vehicles that are propelled by both an internal combustion and heat engine and to a significant extent by an electric motor that draws electricity from a battery (with a capacity of at least 4 kilowatt-hours) that can be recharged from the grid.¹¹

4.3.2 Measuring Compliance with Zero Emission Vehicle and Plug-In Hybrid Electric Vehicle Acquisition Requirements

Compliance with vehicle acquisition requirements is measured based on vehicle acquisition credits, which are earned based on the acquisition of any LSEV or light-, medium-, or heavy-duty ZEV or PHEV. The number of credits required for compliance is calculated as a percentage of “covered passenger vehicles.” Covered passenger vehicle acquisitions include the total annual acquisition of vehicles classified as sedans and station wagons that the agency has not exempted from the executive order (e.g., law enforcement or emergency response vehicles).

Once agencies report vehicle acquisition data in FAST, the FAST system will automatically calculate an agency’s E.O. 13693 annual ZEV and PHEV acquisition compliance. The basis for compliance is ZEV and PHEV acquisition credits, which are granted based on the number of ZEVs and PHEVs acquired. To comply, agencies must accumulate:

- 20 credits per 100 covered passenger vehicles acquired within each fiscal year from FY 2020 through FY 2024
- 50 credits per 100 covered passenger vehicles acquired within each fiscal year from FY 2025 onward.

Federal fleets earn one credit for all light-, medium-, or heavy-duty ZEVs and PHEVs acquired, including vehicles that agencies determine to be exempt from the E.O. 13693 requirements. Fleets receive a “bonus” for any ZEV or PHEV acquisition not meeting the passenger vehicle definition set forth in the executive order—agencies receive acquisition credits for these vehicles (in the numerator), but the acquisitions are not counted in the number of subject vehicles (in the denominator, which is the value that is used to establish the actual acquisition requirement). Fleets also receive one credit for each electric-powered low-speed vehicle (LSEV) acquired. LSEVs are four-wheeled vehicles weighing less than 3,000 pounds with top speeds of 20 to 25 miles per hour. LSEVs do not meet the definition of a “motor vehicle” for the federal fleet (42 U.S.C 13211(13) and 42 U.S.C. 7550(2)), and therefore are not included in the calculation of the covered passenger vehicle acquisition requirement.

¹¹ Defined in section 131 of Public Law 110-140, 42 U.S.C. 17011

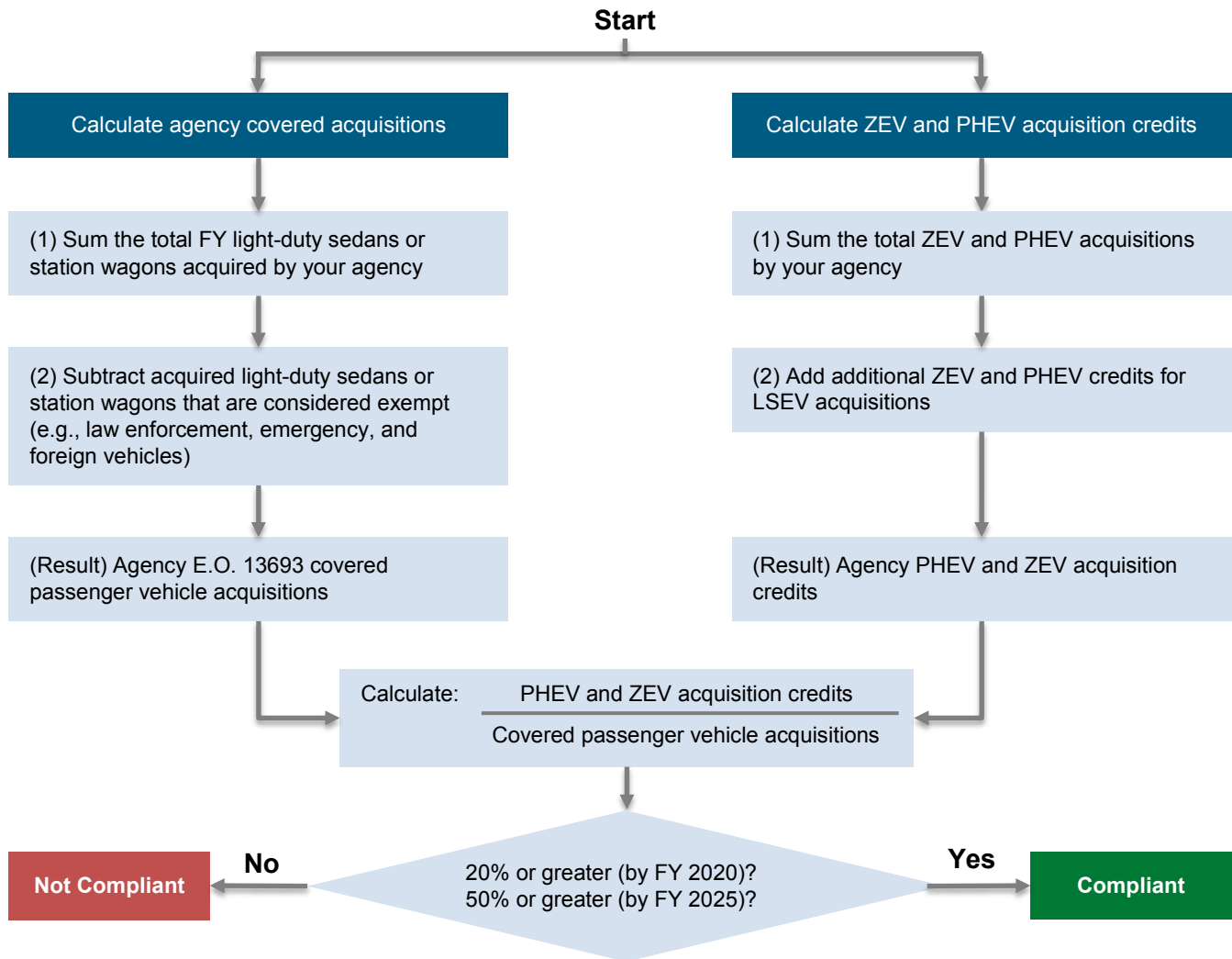


Figure 4-1. Determining compliance with Executive Order 13693 zero emission vehicle and plug-in hybrid electric vehicle acquisition requirements

4.4 Reporting

To track compliance with the ZEV and PHEV acquisition requirements, federal agencies are required to collect and report accurate annual vehicle acquisition and inventory data in FAST by vehicle type, fuel type, exemption type, and location. These data will be used in FAST to automatically calculate annual compliance with both the E.O. 13693 ZEV and PHEV and EPA 1992 AFV acquisition requirements. Fleets must input annual vehicle acquisition and inventory data into FAST each year; the reporting period begins on October 1 and closes on December 15. For more information on annual reporting in FAST, see Section 3.4 of this guidance document.

4.5 Planning for Electric Vehicle Deployment

As with evaluating the suitability to deploy other types of AFVs, agency fleet managers should consider several important factors in deciding where to acquire and place EVs. Deploying EVs directly and effectively reduces fleet GHG emissions from vehicles, at any fleet location, regardless of number of vehicles or alternative fuel availability. Generally, EV deployment is typically most effective at fleet locations without access to other alternative fuels. Fleet managers should evaluate fleet location and vehicle operating characteristics in deploying EVs, including vehicle duty cycle (i.e., how the vehicle is used and typical driving range) and availability of

EVSE, or charging infrastructure, which is used to refuel EVs. DOE and GSA recommend that fleet managers implement the following framework for each fleet location to identify fleet and location characteristics that suggest optimal EV deployment strategies:

1. **Identify candidate vehicles at fleet locations with existing charging stations.** Locations with existing charging infrastructure may offer the most cost-effective opportunity to replace conventional vehicles with EVs.
2. **Identify conventional-fueled vehicles that are not candidates to be replaced with vehicles that use other alternative fuels, such as E85 FFVs, CNG vehicles, or diesel vehicles (to use biodiesel).** At locations that have or will have access to E85, CNG, or biodiesel, fleet managers should prioritize acquisition of vehicles capable of using those fuels. Evaluate the duty cycle of vehicles that are not candidates to be replaced with E85 FFVs, CNG vehicles, or diesel vehicles at these fleet locations.
3. **Evaluate the driving requirements of candidate fleet vehicles.** Fleets should evaluate (to the maximum extent possible) the operating characteristics for each candidate vehicle, including average and maximum daily driving range, route, and driving cycle, to determine whether an EV can meet the vehicle mission needs. Battery electric vehicles generally have smaller driving ranges than PHEVs and FCEVs.
4. **Determine the availability of ZEVs and PHEVs to replace potential candidate vehicles.** DOE expects the market availability of ZEVs and PHEVs to expand from subcompact and compact sedans into other LDV categories, and for MDV and HDV availability to expand as well through FY 2025 and beyond.
5. **Identify the number, type, and model of potential EVs to procure.** From the number of potential candidate vehicles and availability of EVs to meet the mission needs, determine how many EVs of each model the fleet can optimally acquire.
6. **Estimate life cycle costs for acquisition of EVs.** Determine whether EVs that meet fleet requirements can be acquired at a reasonable and competitive life cycle cost relative to competing vehicles. Include in this estimate costs for supporting charging infrastructure. Ensure that acquisition of EVs aligns with available fleet resources and achieves compliance with ZEV and PHEV acquisition requirements.
7. **Incorporate the EV acquisition plan into the fleet VAM.** Integrate EV acquisition plans into the optimum fleet inventory in the VAM, ensuring that the agency deploys the vehicles best suited to achieving all required fleet management goals.

Note that as EV model availability and technology improve, the suitability for replacing vehicles with EVs may no longer be limited by some of the factors (such as duty cycle and availability of charging infrastructure) discussed above.

4.6 Planning for Fleet Charging Infrastructure

Section 3(g)(vi) of E.O. 13693 promotes the deployment of charging stations at federal facilities, to both support the adoption of ZEVs and PHEVs by the federal fleet and promote sustainable commuting travel practices for federal employees (see Section 4.7). In planning for ZEV and PHEV acquisition, agencies should evaluate and procure the most appropriate charging station—also referred to as electric vehicle supply equipment (EVSE)—that meets the unique characteristics of the fleet and facility.

EVSE is a set of components that link the power source to an EV: (1) the interface to the power source, (2) the cord, and (3) connector to the vehicle. The type of EVSE needed typically depends on the types of EV procured (charging requirements for all-electric vehicles are typically greater than PHEVs and LSEVs). EVSE are categorized by the rate at which batteries are charged—Level 1, Level 2, and Level 3 (DC fast chargers). Low-level chargers provide electricity at slower speeds, but are the easiest and least costly to install and maintain. Higher-level chargers can charge EVs more quickly; however, they are generally more expensive and require more robust power sources. As of December 2015, Level 2 charging stations are the most common type of EVSE

used at fleet depots, parking garages, workplaces, and publicly available facilities. Regardless of the level of EVSE acquired, managers should ensure that a method for capturing charging data (e.g., duration, electricity consumption, and other related charging event information) is in place, where feasible.

The following sections provide a step-by-step process to guide federal fleet managers and federal facility managers in the selection, siting, and installation of EVSE at federal facilities. Agencies may also consult materials developed by the Department of Energy’s FEMP and Vehicle Technologies Office, available from the Alternative Fuels Data Center.¹²

4.6.1 Coordinating Charging Station Deployment at Fleet Locations

Successful deployment of charging stations, or EVSE, requires coordination between the location’s facility manager and fleet manager. The facility manager is typically responsible for both real property and utility management at the location, and may be integral in the siting, procurement, installation, operation, and maintenance decisions and management for the EVSE. DOE recommends developing a charging station deployment team that may include the following stakeholders:

- Fleet managers
- Sustainability officer or coordinator
- Advocate or proponent for the project
- Facilities manager
- Power utility and/or electrician
- Decision maker to authorize and prioritize EVSE and allocate funds as needed.

4.6.2 Identifying Electric Vehicle Supply Equipment Needs

Before procuring and installing EVSE, fleet managers should first determine how many and what type of charging stations to acquire. This analysis can be broken down into the following seven steps:

1. **Are there other existing EV charging stations that the fleet can use?** Determine if any EVSE nearby could support your needs, including existing Level 1 outlets. Using existing EVSE eliminates the cost of procuring and installing your own EVSE.
2. **What are the plans for deployment of EVs—where and how many?** Fleet and facility managers should develop an EVSE strategy that will support the needs of the EVs currently within their fleet and any future expansions to the fleet at their location.
3. **What charging speed (Level 1, 2, or 3) best meets your needs?** The speed at which your EVs need to charge will determine both how many charging stations you need and their type.
4. **When will vehicles be charging? Will charging be opportunistic or scheduled? How many EVs will be charging simultaneously?** The greater the frequency and length of charging, the more chargers will be required. Charging frequency and length depends on three factors: the type of EV, the EV’s daily mileage use, and the EVSE’s charging level.
5. **Who will have access to the EVSE at each site (fleet, employees, public, other authorized users)?** Agencies are strongly encouraged to provide federal employees with access to fleet EVSE. Access differs

¹² <http://www.afdc.energy.gov/>

based on who can use the EVSE and how payment will be collected, as necessary. Section 4.7 below discusses policies for employee personal use of federal fleet charging stations.

6. **What is the payment process for fleet and non-fleet (employee, public, other authorized users) vehicles? What are the data collection needs?** Agencies are required to track the electricity used to charge fleet EVs for annual reporting in FAST. Optimally, you will be able to collect data on each recharging transaction by each EV that uses your EVSE. Agencies may also need to determine how they will collect payments from employees who charge non-fleet vehicles (see Section 4.7), and how to control access to EVSE.¹³
7. **Based on this information, how many and what type of EVSE are needed?** Based upon the number of EVs, the best charging level(s) to use, data considerations and requirements, and the frequency and scheduling of EV charging, determine the characteristics of the EVSE that you need for your site.

4.6.3 Electric Vehicle Supply Equipment Siting Analysis

After determining your EVSE needs, the next step is to prepare for the placement of EVSE at the site. The siting analysis focuses on choosing a charging station location and design, deciding on the EVSE model, evaluating power requirements, and selecting data collection needs. While there are a number of factors and criteria to consider (a more detailed listing is provided in the Handbook), the following steps are a useful place to begin:

1. **Where will you locate the EVSE and parking spaces for charging? How many spaces are needed?** The location should be suitable for the needs of the fleet EVs, in terms of ease of access and frequency of use. If possible, keep the EVSE sheltered from the elements. Rain, sunlight, and extreme temperatures can slowly have deleterious effects on the EVSE.
2. **What is the availability of power and electrical requirements?** Installing EVSE on spaces that are closer to electrical sources (e.g., transformers or an electrical closet) will reduce installation costs (less trenching and power lines).
3. **How will you design charging spaces to manage cords and walkways?** Cords can be a tripping hazard. Install EVSE such that cords do not cross busy walkways. Different EVs have charging ports in different locations. Review the types of EVs you will need to support, and where they need to be charged when determining where to install chargers.
4. **What EVSE type best meets your needs?** You should choose EVSE based on four criteria: payment and data requirements, charging speed, mounting type, and cost. Charging stations are available on different GSA Multiple Award Schedules to meet a wide range of these needs.
5. **What are the costs?** When deciding which EVSE technology to install, identify the costs. The cost of implementing EVSE can be broken down into three main categories: purchase price or leasing cost, installation costs, and maintenance and support costs.
6. **What types of signage and policies will be necessary to effectively communicate and reserve any parking spaces served by EVSE?** Signage can help direct EV drivers to the charging station location and inform them of any parking restrictions.

¹³ Section 1413(c) of the *Fixing America's Surface Transportation Act* (FAST Act, Public Law 114-94)

4.6.4 Procuring and Installing Electric Vehicle Supply Equipment

After completing a siting analysis, you will be ready to procure the EVSE, develop a statement of work, and contract for installation. GSA provides schedules for both EVSE purchase and basic installation (i.e., installation that does not require architect or engineering services). Agencies should coordinate EVSE procurement through GSA in order to realize savings through volume discount pricing.

Before procuring EVSE, it is important to answer the following questions: (1) who is responsible for procurement; (2) who is responsible for managing installation; and (3) who pays for procurement/installation? These answers may vary across fleets. Generally, either the fleet or facilities offices will be responsible for procurement and installation. Procurement of charging equipment may have implications for both fleet and facilities, so coordination may be necessary to ensure proper preparation for installation.

4.7 Employee Personal Use of Charging Stations at Federal Facilities

Section 7(f) of E.O. 13693 encourages agencies to establish policies that promote sustainable commuting and work-related travel practices, including workplace vehicle charging, for privately owned all-electric vehicles and PHEVs. Section 1413(c) of the *Fixing America's Surface Transportation Act* (FAST Act, Public Law 114-94, codified at 42 U.S.C. § 6364) authorizes GSA and other federal agencies to install, operate, and maintain charging stations for use by federal employees and authorized users on a reimbursable basis, allowing for and requiring the collection of fees to recover these costs. The FAST Act permits federal employees to use federal fleet charging stations, as long as they do not interfere with federal fleet vehicle use.

CEQ has issued *Guidance for Federal Agency Implementation of Workplace Charging Pursuant to the Fixing America's Surface Transportation Act* in two parts. The first part¹⁴ outlines how federal agencies can take advantage of workplace charging opportunities under the FAST Act and provides an approach for a uniform fee for Level 1 charging receptacles (i.e., wall outlets) for the purposes of seeking reimbursement under the FAST Act. The document also describes how agency CSOs should coordinate with agency fleet managers to report annually on the implementation of workplace charging in FAST. The second part¹⁵ addresses the provision of EVSE with cordsets, including Level 1, Level 2, and DC Fast Charging for use by employees and authorized users. Please note that this guidance applies to federal buildings under the administrative jurisdiction, custody, or control of agencies other than GSA. GSA has separately issued guidance—*PBS Electric Vehicle Supply Equipment Infrastructure Management*¹⁶—on the use of and financial accountability for EVSE infrastructure at facilities under GSA jurisdiction, custody, or control.

¹⁴ https://www.whitehouse.gov/sites/default/files/guidance_for_federal_agency_implementation_of_workplace_charging_-_l1_ch....pdf

¹⁵ https://www.whitehouse.gov/sites/default/files/guidance_for_federal_agency_implementation_of_workplace_charging_electric_vehicle_supply_equipment.pdf

¹⁶ <https://www.gsa.gov/portal/directive/d0/content/535053>

5 Vehicle Allocation Methodology Requirements

5.1 Overview of Requirements

The objective of this E.O. 13693 requirement is to reduce overall fleet GHG emissions by using a combination of mileage reduction, vehicle size reduction, and energy efficiency and AFV capability improvements. Agencies must address these factors using a process known as a VAM, which helps agencies eliminate unnecessary, oversized, or fuel-inefficient vehicles for the fleet. The VAM is organized around a VAM study, conducted at least once every five years to identify the optimum composition of agency fleets, and annual reports that track progress in achieving this optimum fleet inventory.

5.2 Applicability

Agencies should be aware that the requirement to conduct a VAM study contained in FMR 102-34 still applies even if the agency is not subject to the E.O. 13693 fleet requirements.

5.3 Vehicle Allocation Methodology Process

The VAM process consists of the following three components:

- **Conduct a VAM study.** Agencies should conduct a new VAM study at least once every five years, or more frequently if the agency's mission or resource requirements change. A VAM study is a critical element of fleet management. It will help your agency develop a vehicle acquisition and management strategy that supports per-mile GHG emission reductions through the acquisition and appropriate deployment of more efficient vehicles as well as AFVs. The VAM study also helps to identify vehicles that lack a demonstrated mission need and therefore, are candidates for reassignment or disposal. The requirement to conduct a VAM study covers an agency's entire global fleet, encompassing all vehicle types, including law enforcement and emergency response vehicles.
- **Determine the optimum fleet profile.** Based on the VAM study, each agency should produce a profile of its optimum fleet, which summarizes the numbers and most appropriate types of vehicles required to meet mission requirements, and produces optimum compliance with relevant mandates (GHG emissions, ZEV and PHEV acquisition, AFV acquisition, telematics, etc.). The optimum fleet profile is the agency's target fleet inventory, toward which progress is measured.
- **Acquire and dispose of vehicles to achieve the optimum fleet inventory.** Each agency should develop a vehicle acquisition and disposal strategy that establishes a path toward achieving the optimum fleet profile. This strategy should be continuously pursued and evaluated, with the agency focusing on eliminating unnecessary or nonessential vehicles, identifying new vehicle needs, and acquiring more fuel efficient and lower GHG-emitting vehicles that meet mission requirements, while ensuring compliance with AFV as well as ZEV and PHEV acquisition requirements. Each fiscal year, the agency is required to report its progress in achieving the optimum fleet inventory, as discussed in Section 5.4.

5.4 Vehicle Allocation Methodology Reporting Requirements

To track the progress toward attainment of the optimal fleet profile, federal agencies are required to submit data in FAST each year (which generates the annual VAM report for agencies to include with their SSPP as noted below) to support a comparison of the agency actual fleet inventory with the optimal fleet profile.

Agencies are also required to complete an FMP each year, documenting the agency's efforts and progress to achieve their VAM optimal fleet profile, as well as any budget-related issues. Agencies must submit their FMP, including an annual VAM report, as an appendix to their SSPP (due by June 30 each year).

5.5 GSA Vehicle Allocation Methodology Assistance

GSA provides additional guidance and assistance to agencies in establishing and documenting a structured VAM. Questions and requests for assistance should be sent to vehicle.policy@gsa.gov.

6 Vehicle Telematics

6.1 Overview of Requirements

Telematics refers to technology installed on vehicles that combines telecommunications and information processing to receive and collect vehicle performance, usage, maintenance and other data, and transmit that data back to an organization. The deployment of telematics in the federal fleet can assist with achieving the E.O. 13693 goal to reduce fleet-wide per-mile GHG emissions from agency fleet vehicles. For purposes of this guidance, we refer to telematics applications where fuel consumption can be reduced through real-time and historic vehicle data that will monitor and manage driver behaviors and activities and provide alerts for speeding, idling, after-hours use, and maintenance reminders.

E.O. 13693 requires each agency to deploy telematics for all new LDV and MDV acquisitions no later than two years after the date of E.O. 13693 (by March 19, 2017), except where the agency determines that it is not appropriate. The intent of this requirement is for agency fleets to install telematics on all new LDVs and MDVs where it is life cycle cost effective. This includes GSA-leased, agency-owned, or commercially leased vehicles. Agencies are encouraged to include law enforcement and emergency response vehicles where possible in order to improve the overall sustainability of its agency fleet, unless specific exemption authority cited in E.O. Section 18 has been determined and approved by the Head of the Agency. In addition, although not an E.O. 13693 requirement, agencies are strongly encouraged to install telematics on their existing fleet where they deem it appropriate to do so.

6.2 Deploying Vehicle Telematics

GSA provides ongoing guidance to agencies to assist with telematics deployment, including seeking to make these products and services available. Policy-related questions and requests for assistance should be sent to vehicle.policy@gsa.gov. Agencies can use GSA Schedules or utilize a Blanket Purchase Agreement set up by the GSA Office of Fleet Management to obtain telematics for their fleet vehicles. Agencies are reminded that telematics are not automatically provided on GSA-leased or -purchased vehicles at the time that this guidance is issued. If desired, telematics must be requested from GSA. Visit GSA Fleet Solutions¹⁷ for more information on acquiring telematics, or email the GSA Fleet Solutions team at fleetsolutions@gsa.gov.

6.3 Reporting

Each federal agency must discuss its efforts and plans to deploy vehicle telematics in its FMP. The FMP is submitted annually as an appendix to the agency SSPP (due by June 30 each year), and allows each agency to describe their progress toward meeting E.O. 13693 requirements. CEQ and OMB will review and evaluate each agency's plan.

¹⁷ <https://www.gsa.gov/fleetsolutions>

7 Collecting and Managing Vehicle Operational Data

7.1 Overview of Requirements

Section 3(g)(iv) of E.O. 13693 requires agencies to collect and manage data at the asset (i.e., vehicle) level, rather than in aggregate. The data is collected and organized in a formal agency fleet management information system (FMIS), and agencies must submit relevant asset-level data from that system to FAST, FMVRS, and FleetDASH.

7.2 Collecting and Managing Asset-Level Fleet Data in Fleet Management Systems

Each federal agency is responsible for collecting and reporting data on its vehicle fleet. FMR §102-34.340 requires that each federal agency “must have a fleet management information system that: (1) identifies and collects accurate inventory, cost, and use data; (2) provides the information necessary to satisfy both internal and external reporting requirements; (3) collects all costs incurred in the operation, maintenance, acquisition, and disposition of motor vehicles used for official purposes; and (4) is capable of providing the data required for external reporting, such as FAST.”

E.O. 13693 requires that each agency ensure its FMIS can support the collection and management of data at the asset level, including importing data from vehicle telematics and exporting asset-level data to support government-wide reporting systems. To support agency efforts to transition to asset-level data reporting, a vehicle-level data element reference, a vehicle-level data business rules reference, and the vehicle-level data XML schema (a language for expressing constraints about XML documents) are available for download from FAST. An agency’s FMIS should be based at the department or agency headquarters level and include all motor vehicles within the department or agency. The system should also include reporting and accountability structures to accommodate subordinate regional and field offices.

The agency FMIS must also support internal and external reporting requirements. This includes feeding relevant asset-level data to each of the three primary federal fleet data management systems—FMVRS, FAST, and FleetDASH. An overview of each of these systems and the relevant asset-level data in the FMIS are provided in the sections below. Agencies that do not have an FMIS capable of collecting and reporting data at the asset level are encouraged to use the Federal Fleet Management System (FedFMS), a vehicle asset management system GSA Fleet offers to other federal agencies.

7.3 Federal Motor Vehicle Registration System

The FMVRS is a GSA-maintained system containing information on vehicles registered to federal government agencies. Each agency should ensure its capability to provide and update FMVRS data on a regular basis from its FMIS.

7.4 Federal Automotive Statistical Tool

As discussed in Section 3.4 of this guidance, federal agencies are required to collect and report accurate fuel consumption, mileage, cost, inventory, and acquisition data into FAST for each fiscal year—the reporting period begins on October 1 and ends on December 15 following each fiscal year. Entering the information into the FAST reporting tool allows DOE to determine whether the fleet has complied with a variety of sustainability regulatory obligations, including: (1) E.O. 13693 per-mile GHG emissions requirements; (2) ZEV and PHEV acquisition requirements; (3) EPA 1992 AFV acquisition requirements; and (4) Section 701 of EPA 2005 requirements regarding alternative fuel use in dual-fueled AFVs.

For reporting of fleet data in FY 2017 and later years, agencies must upload vehicle asset-level data from their FMIS to FAST using a standardized file structure, which includes vehicle inventory, cost, mileage, and fuel use information for each vehicle. Agencies are also encouraged to use this method for FY 2016 reporting.

7.5 FleetDASH

FleetDASH is an online tool that provides federal fleets with the capacity to track—at the asset level and at regular intervals—agency fleet fuel consumption, GHG emissions, vehicle usage patterns, and vehicle inventories. FleetDASH users can view national summaries or drill down through agency organizational levels to ultimately view individual vehicle operational patterns and fuel transactions relative to the location of existing alternative fuel infrastructure. FleetDASH allows agency users to evaluate progress in meeting sustainability and GHG emission reduction efforts and identify opportunities for improvement. Specifically, the tool uses geographic analysis to identify instances in which conventional fuel was used when alternative fuel was available for refueling of fleet dual-fueled AFVs.

Data required to support FleetDASH include vehicle attribute and vehicle-level fuel-use transaction data.

Required vehicle attribute data include:

- Vehicle identification, such as VIN and tag number
- Organizational assignment of each vehicle
- Fuel types on which each vehicle is capable of operating
- Vehicle class and other descriptive information
- Garage location and point of contact information
- Vehicle utilization metrics, such as vehicle mileage.

Required fuel-transaction-level data include:

- Specific vehicle fueled
- Fuel quantity
- Fuel type
- Fueling location.

Appendix A: Vehicles Exempt from Executive Order 13693 Requirements

Table A-1 lists the **vehicles that agencies may determine to be exempt** from the E.O. 13693 requirements. Under E.O. 13693, vehicles that agencies may exempt from the E.O. 13693 requirements are similar to those under EPCA 1992 (42 U.S.C. § 13212(b)(3)). However, each agency should avoid exempting these vehicles—to the maximum extent practicable—to improve the overall sustainability of its fleet.

Table A-1. Vehicles That May Be Exempted from Executive Order 13693 Requirements

Law enforcement vehicles (see Section 1.6.3 for further guidance)
Emergency response vehicles
Military tactical vehicles —Motor vehicles (excluding general-purpose motor vehicles) designed to military specification, or a commercially designed motor vehicle modified to military specification to meet direct transportation support of combat or tactical operations and protection of nuclear weapons. These vehicles are inherently mission critical and are used for no other purpose.
Nonroad vehicles —Vehicles that are not licensed for use on all roads and highways
Motor vehicles used for motor vehicle manufacturer product evaluations or tests
Vehicles owned and operated by the Central Intelligence Agency (CIA)
Federally owned vehicles operated solely by Indian nations or state-run Fish and Wildlife services , as applicable
Vehicles operated outside of the United States

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